NEW PRODUCTS

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers. PHYSICS TODAY can assume no responsibility for their accuracy. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

LAWRENCE G. RUBIN

FOCUS ON MATERIALS

Sputtering Targets

Goodfellow offers a wide range of evaporation and sputtering targets, available in 62 different metals and alloys, and compounds such as borides, carbides, fluorides, nitrides, oxides, selenides, silicides, sulfides, and tellurides. In addition, the surfaces of flat sheets up to 80 × 400 mm can be heat-treated, remelted, or alloyed using a continuous thermal process. Thin layers of metals or oxides can also be melted onto the surface. This process is especially suited for the creation of double-layer sheets and foils, or for ceramic superconductors on metallic or ceramic substrates, and for the creation of thin layers of solder on metals. In general, targets are made to order, but a number are held in stock, along with an extensive range of materials suitable for evaporation. *Goodfellow Corp, 800 Lancaster Avenue, Berwyn, Pennsylvania 19312-1780*

Circle number 181 on Reader Service Card

Pt- and Pd-Clad Wire and Ribbon

Anomet Products has introduced platinum- and palladium-clad wire and ribbon composites that reportedly eliminate the need for the more expensive 100% precious metal in many applications. The cladding provides characteristics such as weldability, conductivity, thermal stability, and biocompatibility. Core materials can include titanium, tantalum, niobium, molybdenum, nickel, iron-nickel, stainless steel, copper, and silver, depending on the properties desired. The composites are available in wire sizes from 0.002 to 0.375 inch o.d. and in ribbon widths up to 1.00 inch, with varying thicknesses, depending on width. Applications include specialty electronics, medical devices, and electrochemical equipment. *Anomet Products Inc, 830 Boston Turnpike, Shrewsbury, Massachusetts 01545*

Circle number 182 on Reader Service Card

Rheometer

Bohlin Instruments has announced the C-VOR, a high-resolution modular rheometer and dynamic spectrometer system capable of running all rheological test modes including step-strain testing. The C-VOR's triple-

mode motor control enables its motor to be engaged and controlled as a conventional servomotor, allowing true strain-controlled measurements such as relaxation and stress growth. Alternatively, the motor can be controlled at preset speeds to generate shear-rate-controlled data, or in open-loop mode where stress-controlled tests such as creep and creep recovery can be performed. The rheometer's measuring sensors and its wide range of temperature controls reportedly provide the flexibility for measuring solid polymers in torsion and low-viscosity fluids. *Bohlin Instruments, 11 Harts Lane, Suite 1, East Brunswick, New Jersey 08816*

Circle number 183 on Reader Service Card

Porosity Characterization Chart

Porous Materials Inc (PMI) has developed a chart that lists the relative strengths, weaknesses, and applications of various testing techniques and instruments for porosity characterization. The chart was developed because of the importance of biomaterial porosity and permeability in applications ranging from artificial skin to implants and dialysis membranes. Because different testing techniques and instruments available for characterizing porosity are based on different principles, they don't necessarily provide the same information. The PMI Product Explorer chart matches appropriate instruments and techniques to specific applications. Some of the significant properties included in the chart are largest pore size, mean pore size, pore size distribution, gas and liquid permeability, and system integrity. *Porous Materials Inc, 83 Brown Road, Ithaca, New York 14850*

Circle number 184 on Reader Service Card

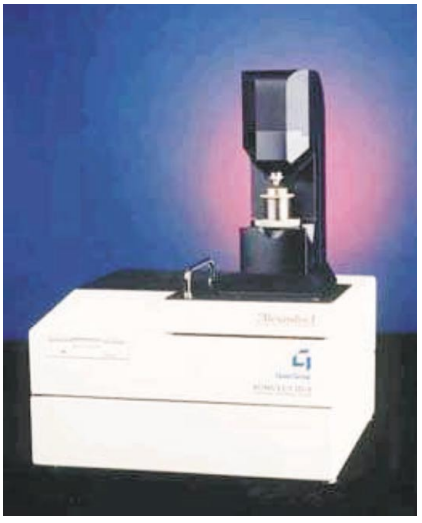
Optically Clear Potting Compound

Master Bond has formulated a new heat-resistant (for service up to 250°C) epoxy potting compound offering high optical clarity. EP121CL is a low-viscosity, two-component composition with a convenient noncritical mix ratio by weight or volume. Its low exotherm and viscosity permit casting in a variety of cross-sectional thicknesses. The cured epoxy provides desirable physical strength and excellent electrical insulation properties that are retained even in the mega- and gigahertz range over a wide temperature range. It also features high resistance to moisture and many chemicals, and can be cooled as desired (a flexibilized version is available). The preferred curing conditions of EP121CL are temperatures of 125°C and above; the epoxy has a very low shrinkage upon cure. *Master Bond Inc, 154 Hobart Street, Hackensack, New Jersey 07601*

Circle number 185 on Reader Service Card

Instrumented Indentation

Quad Group's Instrumented Indentor, Alexandra I, is designed to meas-



ure the hardness, Young's Modulus, yield strength, strain hardening, and other material parameters by a computer-controlled indentation of a rigid indentor into a sample's surface; the indentor's tip can be diamond, carbide, or metal. The instrument can be used to characterize materials of more than 5 μm thickness and can appraise the mechanical properties associated with the toughness of solid materials, the capacity to absorb energy, and the durability (degradation of toughness), for example, as a function of exposure to various environments. The Alexandra I requires only a flat sample specimen with a smooth surface. A single analysis can be accomplished in about 100 seconds, while statistically significant numbers of tests can be done in a few hours. *Quad Group Inc, 1815 South Lewis Street, Spokane, Washington 99224*

Circle number 186 on Reader Service Card

Ceramic Potting Compound

Hottec's Formceram C442 is a potting grade of ceramic 3000°F cement. Because it is mostly aluminum oxide of fine grain size, it has extreme temperature resistance, high heat conduction, good dielectric strength, and allows the copying of fine detail in casting applications. It can be in direct contact with heaters and still supply rigid mechanical strength. It is useful in potting electronic devices where it is important to remove heat and hold the components in alignment. In sensor applications, such as temperature probes and accelerometers, the product's high conductivity and rigidity lead to more rapid response. Formceram C442 is a simple water-mix hydraulic cement that grows intertwining crystals; it does not "dry" to cure. Usually the material can be handled about four hours after preparation, but an accelerator can be used if more rapid curing is needed. *Hottec Inc, One Terminal Way, Norwich, Connecticut 06360*

Circle number 187 on Reader Service Card

Single Crystal Sapphire Substrates

Meller Optics has introduced single crystal sapphire substrates for the epitaxial deposition of gallium nitride and other III-V and II-VI thin films. These C-plane substrates can be supplied in sizes as small as 50-mm round and 31.75-mm square by 0.330- or 0.440-mm thick and flat to better than 5 μm. They feature 0001 surface orientation, better than 0.3 nm RA roughness, and are used in the manufacture of bright blue and green LEDs. The substrates can be supplied with either one or two polished sides and are also available for carrier applications where thin films of silicon or gallium arsenide are polished on top of the wafer. Ultraflat wafers are lapped flat to better than 0.5 fringe (at HeNe) and parallel from 20 to better than 5 arc seconds. *Meller Optics Inc, 120 Corliss Street, P.O. Box 6001, Providence, Rhode Island 02940*

Circle number 188 on Reader Service Card

Acoustic Resonance Inspection System

Resonic Technology has developed the ARIS nondestructive test system, which can provide 100% flaw detection at up to 800 ft/min. The system uses noncontact acoustic scanning technology for simultaneous measurement of surface and subsurface microstructure changes as small as 25 μm in solid or tubular cylindrical metal stock. The ARIS modular design combines a PC-based analyzer with an EMAT (electromagnetic acoustic transducer). There are a variety of EMATs to choose from; they can be configured for different sizes and different penetration depths and can be stacked for special applications. The system will identify and characterize defects and anomalies, provide material type verification and temperature profiling, and measure elastic modulus and granularity. *Resonic Technology, 2524 Townsgate Road, Suite F, Westlake Village, California 91361*

Circle number 189 on Reader Service Card

Analytical Balance

The Adventurer Analytical balances from Ohaus are available in 65-g and 210-g capacities, with a readability and repeatability of 0.1 mg, a linearity of ±0.2 mg, and a stabilization time of 4 s. The balance's contoured keypad is angled to enhance viewing of the large LCD display, and features left and right tare keys. The Adventurer comes with a full-sized three-door draft shield that protects against environmental disturbances and offers easy access from the top and either side, and a leveling system with level bubbles and adjustable feet. An integrated weigh-below hook simplifies the process of below-balance weighing applications such as density determination. *Ohaus Corp, 29 Hanover Road, P.O. Box 900, Florham Park, New Jersey 07932-9000*

Circle number 190 on Reader Service Card

Mercury Recovery System

Brooklyn Thermometer has introduced their new Mercury Recovery/Recycling Case to allow for easy disposal of mercury-bearing waste (from thermometers, batteries, thermostatic switches, mercury relays, and other devices). Mercury is a naturally occurring element that can be cleaned up (distilled) and recycled; the recycling process used satisfies the Environmental Protection Agency's required use of the Best Demonstrated Available Technology protocol. The case's center-seal container safely holds the mercury-bearing waste until it is ready to be shipped. All necessary shipping labels and documentation are included for return to the authorized recycling facility. *Brooklyn Thermometer Co, 90 Verdi Street, Farmingdale, New York 11735* ■

Circle number 191 on Reader Service Card